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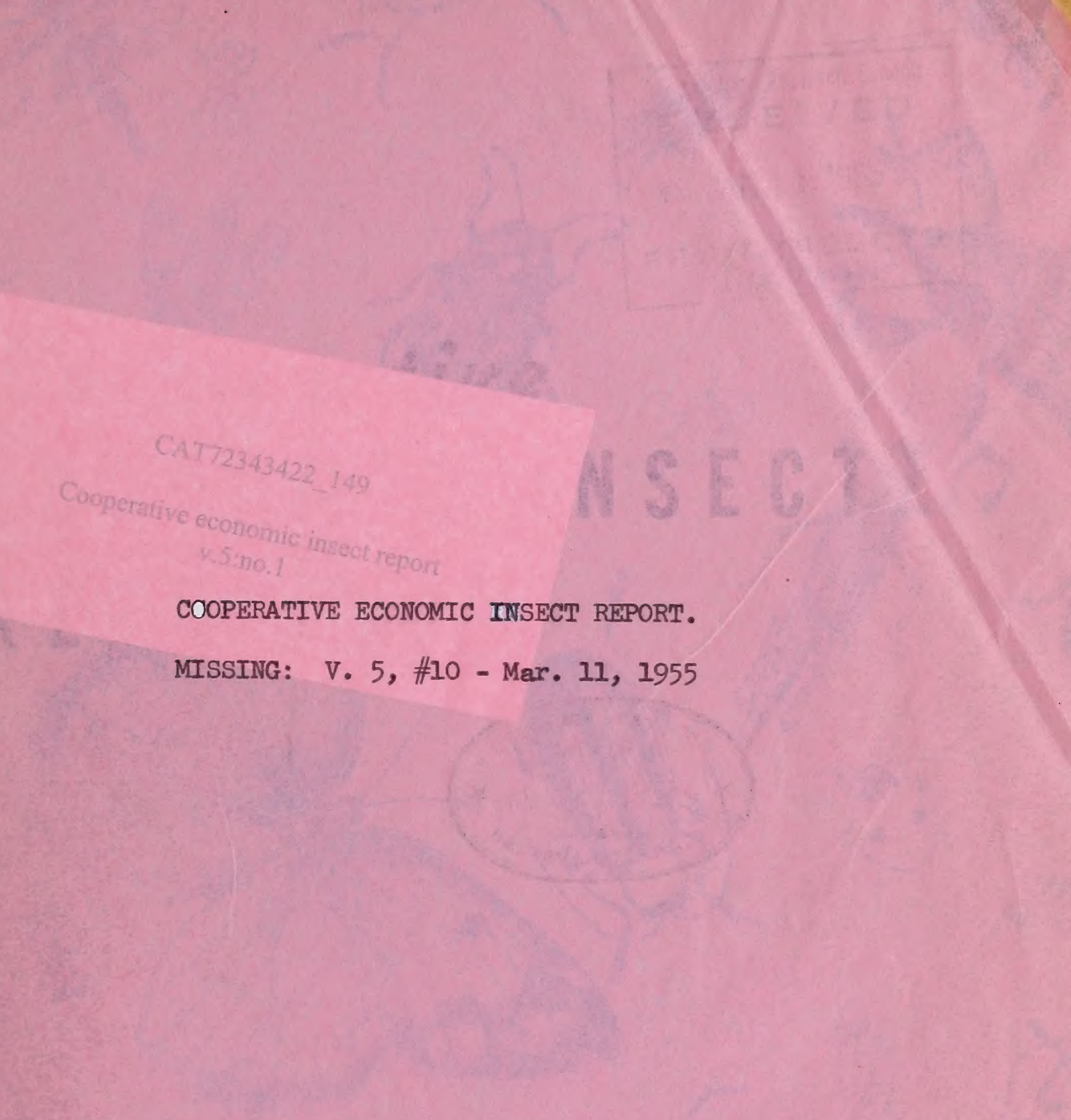

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COOPERATIVE ECONOMIC INSECT REPORT.

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Issued by

PLANT PEST CONTROL BRANCH

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

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VOL.5 No.1 JANUARY 7, 1955

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FRUIT INSECTS SECTION

Cooperative
ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Economic Insect Survey Section
Plant Pest Control Branch
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

Volume 5 January 7, 1955 No. 1

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

YELLOW CLOVER APHID continues to cause damage to alfalfa in Arizona. (page 3).

Status of GARDEN CENTIPEDE in Washington. (page 4).

May have widespread outbreak of SOUTHERN PINE BEETLE in Alabama next spring. (page 5).

Summary of INSECT CONDITIONS - 1954 - North Carolina (page 7) Tennessee (page 12) and Rhode Island (page 15).

Summary of GYPSY MOTH conditions in 1954. (page 17).

* *

We want to take this opportunity to thank the many entomologists and other agricultural workers who contributed to the Cooperative Economic Insect Report during the past year. It is only through your cooperation that this Report is made possible and it can be only through you that a better and more useful report will develop. During 1954 nearly 1200 reports were submitted from the State Clearing Offices. In addition many reports were received from Plant Pest Control Branch and Entomological Research Branch sources. It is estimated that more than 600 individuals submitted notes through these different channels during the year. Over 2900 copies of the Cooperative Economic Insect Report are mailed weekly to interested workers in this and 18 foreign countries.

We shall look forward to your continued cooperation and solicit your suggestions and criticisms for improving the entire cooperative survey program. We wish each of you a very successful and productive 1955.

Reports in this issue are for the week ending December 31, 1954, unless otherwise designated.

WEATHER BUREAU'S 30-DAY OUTLOOK
* January 1955

The Weather Bureau's 30-day outlook for January calls for temperatures to average above normal east of the Appalachians and below normal west of the Rockies. In the central part of the country above normal temperatures are expected in the north and below normal in the south Precipitation is expected to exceed normal in the eastern part of the country. Near normal amounts are indicated in the remainder of the country except for subnormal in the far Southwest.

*This report released by the Weather Bureau on December 31, 1954.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington, D. C. Price: $4. 80 a year, $2. 40 for six months.

WEATHER FOR THE WEEK ENDING JANUARY 3, 1955

Last week was abnormally warm in regions near the Canadian Border and from the eastern portions of the central and lower Great Plains to the Atlantic Coast, but considerably colder than normal with a damaging freeze in the far Southwest. Precipitation was heavy in most areas east of the Great Plains, in the Pacific States except interior portions of southern California, and in some sections of the northern Rocky Mountains. The first part of the week was cold in the far West with subzero minima in central and northern interior areas and freezing to the Mexican Border. On the 28th Woodruff, Utah, recorded -30°. Freezing in southern California damaged some unprotected citrus and avocados in colder spots and frost nipped some tender vegetation in the Imperial Valley. Unusually low temperatures in the lower valleys of southern Arizona, with minima as low as 18° to 19° in the Salt River Valley and 20° to 25° in the Yuma area caused some citrus damage and ruined the tomato crop in the latter area. East of the Mississippi the entire week was abnormally warm except for a freeze in the lower Mississippi Valley on the 30th and two rather cold days in the Ohio Valley and Great Lakes region at the beginning of the period. In the Ohio Valley and Middle Atlantic States where weekly averages ranged from 8° to 12° above normal, maximum temperatures were up in the 60's at the end of the period. Precipitation, nearly all occurring early in the week, generally totaled over an inch in the extreme eastern portion of the lower Great Plains and all areas east of the Great Plains except the upper Mississippi Valley,

(Continued on page 6)

CEREAL AND FORAGE INSECTS

YELLOW CLOVER APHID (Myzocallis trifolii) - ARIZONA - Causing considerable damage to alfalfa at Yuma, having spread to practically all new plantings and re-seeded fields. Damage to established plants still not very noticeable. Three nights of below-freezing temperatures caused no noticeable decrease in aphids. Control effective but reinfestation of treated fields continues. Also reported to have caused severe damage for the past 6 weeks in Graham County where it was not pest during the summer, though scattered specimens noted. Lady beetles had larvae abundant on some plants at Tucson, but no indication of build-up of these beetles at Yuma. (Ariz. Coop. Rept.).

ALFALFA WEEVIL (Hypera postica) - MARYLAND - At Laurel, December 21, 27 eggs found in 3 stems out of 54 stems examined. A few adults also found. (U. Md., Ent. Dept.).

GREENBUG (Toxoptera graminum) - FLORIDA - Medium infestation of nymphs and adults on pangola grass, Davie; 2 to 3 nymphs and adults per plant 2 miles east of Davie. No apparent damage was indicated. (Link).

FALL ARMYWORM (Laphygma frugiperda) - FLORIDA - Averaging 1 to 2 larvae per square yard of St. Augustine grass near Davie. (Link).

FRUIT INSECTS

SIX-SPOTTED MITE (Tetranychus sexmaculatus) - FLORIDA - Infestations expected to be general and severe on citrus next spring. Past records have shown that cold Decembers are followed by heavy spring infestations and December 1954 (to third week) has been coldest on record. (Pratt, Thompson, Johnson).

WOOLLY APPLE APHID (Eriosoma lanigerum) - WASHINGTON - Forty-two percent, mainly nymphs, still living on exposed sucker growth of apple at Pullman, December 31. Coldest recorded temperatures to date this winter were 13° F. on December 19 and 27. (Johansen).

THRIPS - ARIZONA - Damaged fall growth on younger citrus trees on Yuma Mesa. (Ariz. Coop. Rept.).

A MITE (Tetranychus yumensis) - ARIZONA - Noticeable on citrus at Yuma, but will probably become more prevalent in a month or two. (Ariz. Coop. Rept.).

TRUCK CROP INSECTS

A Special Report on the Garden Centipede, Washington: Symphylids, which are world-wide in distribution, have been reported from nearly every state in the United States. In Washington, the garden centipede (Scutigerella immaculata), one of the more prevalent symphylids, became economically important in 1953, although the species undoubtedly has been in the State for many years. The sudden seriousness of the pest may be due to better environmental conditions. The areas in Washington where the species has been reported are as follows: Vancouver, Longview, San Juan Islands, Mt. Vernon, Puyallup, Yakima, Walla Walla, and Spokane County. Apparently there are no known plants resistant to synphylid attack. The damage is usually more severe on row crops such as beans, peas, and corn. As symphylids live in the soil, they feed principally on root hairs but may also attack other plant parts that are in contact with the soil. Infestations may occur as bull-eye targets, the worst being in the center of the targets. Because of this oddity, satisfactory plot designs require large acreages. Although some control methods have given erratic results, further experimentation is needed to work out successful measures. (Howitt and Waterhouse).

THRIPS - ARIZONA - Three to four per plant found on most lettuce at Yuma. (Ariz. Coop. Rept.) .

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Still occurs in lettuce fields at Yuma though damage is slight. The recent frosts probably have stopped this damage. (Ariz. Coop. Rept.).

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - IDAHO - Collected on November 23 at Hansen and positively identified by R. E. Warner. The sweetpotatoes from which the weevil came were apparently purchased locally. It will be difficult to determine where these sweetpotatoes originally came from. This is the first known record of this weevil having been collected in Idaho. (Douglass). This note should not be construed to mean that there is an established infestation of this weevil in Idaho, but rather that it has been collected as an interception.

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FOREST, ORNAMENTAL AND SHADE TREE INSECTS

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - MISSISSIPPI - Only scattered infestations in the southwestern area. Major control activities have been discontinued on the Mississippi National Forest area. ALABAMA - Prolonged warm weather and continued drought seem to have favored late-season activity. Control continuing on the Bankhead Forest where infestations are spreading from salvage areas. On the Talladega National Forest active beetle populations found in trees adjacent to control areas. Conditions appear suitable for a widespread epidemic next spring. (So. For. Ins. and Dis. Rept.).

BLACK TURPENTINE BEETLE (*Dendroctonus terebrans*) - MISSISSIPPI - Large numbers present in cutting areas in the southwestern part. All stages of the insect may be found in lower portions of tree stems and above and below ground in stumps. Continued drought in bottomland pine areas will necessitate careful observation. ALABAMA - Scattered incidence in Lawrence County. TEXAS - Killing pines in Nacogdoches, Bowie and Liberty Counties. (So. For. Ins. and Dis. Rept.).

A HONEYLOCUST SCALE (*Chionaspis gleditsiae*) - CALIFORNIA - Heavy infestation found on one small locust tree in a nursery at Los Angeles, December 1. The tree was destroyed. This scale is new in California. (Armitage).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE GRUBS - SOUTH CAROLINA - Very numerous in all parts of the State. Cattle examined at Greenville and Columbia indicate that grubs are earlier than usual. Grubs ranging from early first instar to late third instar can be found in backs of animals. (Goodwin).

CATTLE LICE - SOUTH CAROLINA - *Solenopotes capillatus* found easily on cattle in central area. *Linognathus vituli*, *Haematopinus eurysternus*, and *Bovicola bovis* being found throughout State. (Goodwin).

MISCELLANEOUS INSECTS

BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - Bothering home owners in Riverdale and Baltimore, December 21. (U. Md., Ent. Dept.).

FIBER PLANT INSECTS

BEET ARMYWORM (Laphygma exigua) - ARIZONA - Found at rate of 2 to 3 per 100 sweeps in some flax fields around Yuma. Plants 3 to 4 inches high. (Ariz. Coop. Rept., Dec. 23).

Weather (continued)

upper Great Lakes, and the lower Atlantic Coast. These rains greatly helped to restore subsoil moisture in the midwest and south where it had been depleted by summer and fall drought. Although most of the Great Plains received less than one-half inch of moisture, beneficial amounts fell in western Nebraska, most of Kansas, central and eastern Oklahoma, and some sections of north-central Texas. In the remainder of Texas, western Oklahoma, southwestern Kansas, and northeastern New Mexico, amounts were too light to furnish any drought relief. On December 28 and 29 heavy snow fell in a 150- to 200-mile wide belt extending from north-central Texas to Lake Michigan. Depths of 12 inches or more occurred locally from central and eastern Oklahoma to Wisconsin. Fort Scott, Kans., reported 26 inches with a water equivalent of 3.05 inches, and Clinton, Iowa reported 12 inches. Traffic was disrupted for a day. At the end of the period all the snow had melted, except at a few stations in Missouri, northern Illinois, and southern Wisconsin. No other important snowfall occurred east of the Rocky Mountains, and the ground is now bare except in the extreme north. Snowfall was rather general west of the Continental Divide, with heavy amounts in the mountains. Many stations in the Sierra Nevada and Cascade Mountains and a few in the central and northern Rocky Mountains reported depth increases of 2 to 3 feet. (Summary Supplied by U.S. Weather Bureau).

SUMMARY OF INSECT CONDITIONS - 1954

NORTH CAROLINA

Reported by T. B. Mitchell

During this season four injurious species have been recorded in the State for the first time. The APPLE SEED CHALCID (Torymus druparum) was discovered to be generally distributed through the mountain fruit-growing area, with the infestation light to moderate in most orchards. TOMATO RUSSET MITE (Vasates lycopersici) was found in Burke and Wake Counties, associated with the two-spotted spider mite, on tomatoes. In and around Wilmington, a GROUND PEARL (Eumargarodes laingi) was found infesting various grasses, and a WAX SCALE (Ceroplastes ceriferus) was discovered in Brunswick and Stanly Counties on camellia.

General Pests

CORN EARWORM (Heliothis armigera) was prevalent throughout the summer in the coastal plain counties, beginning early in June, causing considerable damage to cotton, field corn, sweet corn, sorghum, soybeans, peanuts, tobacco and tomato. The FALL ARMYWORM (Laphygma frugiperda) appeared in mid-July in the eastern area, and sporadic outbreaks occurred from then until mid-October in scattered areas over the whole State. Corn was most frequently attacked, but damage also to peanuts, small grains, alfalfa, sorghum, pastures and gladiolus. SPIDER MITES (chiefly Tetranychus bimaculatus) occurred in many scattered areas, beginning in late June, causing injury to apple, tomato, cotton, peanuts, and to some ornamentals. Outbreaks of CUTWORMS occurred in the spring, the BLACK CUTWORM (Agrotis ypsilon) damaging corn and tobacco in eastern counties and necessitated two or three replantings of some fields, and VARIEGATED CUTWORM (Peridroma margaritosa) severely damaging cabbage, alfalfa, corn, tobacco and oats in some mountain communities. The PALE-STRIPED FLEA BEETLE (Systena blanda) did a slight amount of damage to corn, cotton and tobacco during spring in Piedmont. STALK BORER (Papaipema nebris) caused some injury to corn and tobacco in Haywood and Madison Counties, while LESSER CORNSTALK BORER (Elasmopalpus lignosellus) became prevalent over eastern area in late summer, damaging peanuts, soybeans, peas, cowpeas and tomatoes. A WIREWORM (Melanotus communis) caused some damage to corn and cabbage in both the mountain and coastal counties. The JAPANESE BEETLE (Popillia japonica) has become abundant in many parts of the State, from east to west, and was especially injurious to various ornamentals, garden plants and fruits, and was found also on soybeans, tobacco and some weeds. Damage to tobacco in most cases was negligible. GRASSHOPPERS (chiefly *Melanoplus femur-rubrum*) caused some injury to pastures, clover and lespedeza.

Field and Forage Crop Pests
In addition to damage from some of the general pests, corn suffered some injury from billbugs, chinch bug, white grubs, corn leaf aphid, corn sap beetle, corn sap beetle, corn flea beetle, a bladeworm (*Chrysomyza demandata*), a sod webworm (*Crambus* sp.), corn blotch leaf miner, corn root aphid, and southern cornstalk borer. The EUROPEAN CORN BORER (*Pyrausta nubilalis*) first became evident in late May and June in the northeastern counties, infesting potatoes, some fields being rather heavily infested, but controls in general adequate. Later generations were found in corn with populations higher near previous potato plantings. Populations in the western counties known to be infested were very light, with specimens or activity very hard to find. In stored corn, reports indicate that infestation of RICE WEEVIL (*Sitophilus oryza*) is lighter than last year. As usual, early maturing hybrids more heavily infested than late varieties. ANGOUMOIS GRAIN MOTH (*Sitotroga cerealella*) was infesting 5 percent of the ears of field corn in Hoke, Warren and Wilson Counties, early in October.

In tobacco, HORNWORMS (*Protoparce sexta* and *P. quinquemaculata*) seemed less abundant than less abundant than last year and much less abundant than in 1952. The highest count of eggs and small larvae was 1 per 3. 5 plants for the season, with most counts very much lower than this. The BUDWORMS (*Heliothis virescens* and *H. armigera*) were also hard to find until late in the season when they became abundant on the suckers and seed pods of stalks still standing. TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) was generally distributed throughout the season, beginning with the plant beds. In the Piedmont some slight damage was done. GREEN PEACH APHID (*Myzus persicae*) also failed to develop in injurious numbers, apparently checked by natural control factors. A TREE CRICKET (*Oecanthus quadripunctatus*) caused some damage in Columbus, Warren and Wayne Counties by ovipositing in the mid rib of the lower leaves. These egg punctures averaged 1 per leaf in some fields. VEGETABLE WEEVIL (*Listroderes costirostris obliquus*) occurred in small numbers in some plant beds, and later some damage to newly-set plants in a few fields, but injury not extensive.

First reports of BOLL WEEVIL (Anthonomus grandis) received first of June, and presquare counts for successive weeks in June indicated populations of 1.85/100 plants (694 per acre), 3.7 (1388 per acre), 3.5 (1313 per acre) and 5.6 (2100 per acre). Square counts indicated the following percentages of infestation through July and August:

Week	Treated	Untreated
June 28	7.9	19.2
July 5	5.0	23.2
July 12	7.4	25.2
July 19	10.0	28.3
July 26	14.6	37.0
Aug. 2	18.3	51.6
Aug. 9	24.5	51.9
Aug. 16	11.7	58.8

Prehibernation counts early in October indicated an average population of 7,600 weevils per acre, although the count in some fields reached about 22,000 per acre. BOLLWORM (Heliothis armigera) occurred in many fields, reported as early as second week in June, but no serious damage until late August when 20-25 percent injury reported in Halifax County. Insecticide applications apparently prevented populations from building up. TWO-SPOTTED SPIDER MITE (Tetranychus bimaculatus)did considerable damage in a few fields. THRIPS (unidentified) were observed in many fields, but damage in general was slight. The COTTON APHID (Aphis gossypii) became abundant in some fields in early June, but populations soon declined from activity of coccinellids and other natural factors. Late in August, a county-wide infestation was reported from Jackson County.

In alfalfa most serious damage was by VARIEGATED CUTWORM which completely destroyed a number of fields in Haywood County during May. The MEADOW SPITTLEBUG (Philaenus leucophthalmus) occurred in many fields in the Piedmont region during April and May, but population levels not high and injury only moderate. LEAFHOPPERS (chiefly Empoasca fabae)were abundant from midsummer on. Peanuts suffered moderate damage from TOBACCO THRIPS (Frankliniella fusca). SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi), due to dry weather, caused only moderate damage this year, while damage from LESSER CORNSTALK BORER (see general pests) was more severe than in any previous year on record, causing heavy damage to pods in a few fields. LEAFHOPPERS were responsible for moderate to heavy damage in some fields. In wheat, oats, barley and rye, spotted outbreaks during spring by

ARMYWORM (Pseudaletia unipuncta) caused the most serious damage, not only directly to these crops, but to lespedeza planted as a cover crop along with the grain, this being a complete loss in many fields. VARIEGATED CUTWORM invaded fields of oats adjacent to infested alfalfa fields in Haywood County and did much local damage.

Fruit Insects

On apple, in Wilkes and other mountain counties, the CODLING MOTH (Carpocapsa pomonella) infestation was held in check most of the season, severe damage occurring only where controls inadequate, or where nearby orchards unsprayed. First adults appeared April 21 in Wilkes County. The first adults of ORIENTAL FRUIT MOTH (Grapholitha molesta) appeared April 8 in Wilkes County. Infestation was light until late summer, when increase began after the apple spray program had been completed. In the Sandhills area, midsummer harvested fruit, which had been sprayed with parathion, was 3 percent infested. Light infestations only on apple by RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) and FRUIT TREE LEAF ROLLER (Archips argyrospila) in the mountains. EUROPEAN RED MITE (Metatetranychus ulmi) was found throughout the apple growing region and caused severe damage in July and August in localized areas. TWO-SPOTTED MITE was severe in very few orchards in Wilkes and Alexander Counties. Another MITE (Tetranychus schoenei) was taken only on unsprayed trees and was not severe. On peach, in the Sandhills area, PLUM CURCULIO (Conotrachelus nenuphar) heavily infested some untreated orchards, but otherwise was held well in check. Midsummer harvested peaches, which had been sprayed with parathion, were 2 percent infested. (For oriental fruit moth, see under apple). PEACH TREE BORER (Sanninoidea exitiosa) was first observed in flight May 27, apparently an early record. Control apparently effective. On grape, in the mountain area, a GRAPE SCALE (probably Aspidiotus uvae) was first observed in May, and some infestations were quite serious by early September.

Truck Crop Pests

On Irish potato, COLORADO POTATO BEETLE (Leptinotarsa decemlineata) was held in check in most areas but local outbreaks occurred in Wayne and Duplin Counties. POTATO TUBERWORM (Gnorimoschema operculella) was reported from Nash, Harnett, Wayne and Halifax Counties. In the northeastern corner of the State EUROPEAN CORN BORER caused some damage to potatoes (see under corn). On tomatoes, in addition to damage by the CORN EARWORM, some injury was caused by TWO-SPOTTED SPIDER MITE, and LESSER CORNSTALK BORER, alluded to previously (see under general pests). MARGINED BLISTER BEETLE

(*Epicauta pestifera*) caused some injury in scattered localities, quite severe in Vance and Franklin Counties. SQUASH VINE BORER (*Melittia cucurbitae*) caused some damage to squash in Duplin County, the infestation ranging from 40 to 85 percent. On cabbage and other crucifers, HARLEQUIN BUG (*Murgantia histrionica*) and CABBAGE WEBWORM (*Hellula rogatalis*) caused considerable damage in scattered areas. In the coastal plain region IMPORTED CABBAGEWORM (*Pieris rapae*) and CABBAGE LOOPER (*Trichoplusia ni*) severely damaged some fields late in season, although control seemed to be effective in most fields in northeastern counties. In the mountains CABBAGE MAGGOT (*Hylemya brassicae*) infested some fields up to 90 percent during June, and the CABBAGE APHID (*Brevicoryne brassicae*) was reported causing damage in Yadkin during April. Also the VARIEGATED CUTWORM (see under general pests) caused some damage in Beaufort County. MEXICAN BEAN BEETLE (*Epilachna varivestis*) caused much injury to garden beans in Henderson County early in summer, but infestation was light in the east. During August and September, the pest severely damaged soybeans in Pasquotank County, causing average loss of about 33 percent. BEAN LEAF BEETLE (*Cerotoma trifurcata*) caused some damage to soybeans and other varieties in scattered areas. On sweet corn, the EARWORM (see under general pests) was severe during the first part of June, but declined during last half. During summer, however, heavy populations developed.

Pests on Ornamentals

A considerable number of pests were found infesting a variety of shrubs and trees, most of them in but one or two localities. Several of the more serious or more commonly occurring pests are as follows: FULLER ROSE BEETLE (*Pantomorus godmani*) on rose, camellia and other trees and shrubs; ASIATIC GARDEN BEETLE (*Autoserica castanea*) on pecan, oak, flowers and shrubbery in New Hanover County; HAWTHORN LACE BUG (*Corythucha cydoniae*) on pyracantha in scattered communities; AZALEA LACE BUG (*Stephanitis pyrioides*) abundant in Wake and Cumberland Counties; SYCAMORE LACE BUG (*Corythucha ciliata*) on nursery seedlings in Harnett County; CITRUS WHITEFLY (*Dialeurodes citri*) heavily infesting gardenia and pyracantha in several communities; DOGWOOD TWIG BORER (*Oberea tripunctata*) reported from several mountain counties; FLORIDA WAX SCALE (*Ceroplastes floridanus*) on holly and camellia in Perquimans and Wayne Counties.

Shade and Forest Tree Insects

ELM LEAF BEETLE (*Galerucella xanthomelaena*) was reported from widely scattered sections, and caused considerable damage to elms during June and July. FALL CANKERWORM (*Alsophila pometaria*) defoliated considerable acreages of hardwood forest in Haywood, Buncombe, Avery, Yancey and McDowell Counties. PALES WEEVIL

(Hylobius pales) did extensive damage to newly-set pine seedlings in Carteret and Craven Counties, where cleancut lumbering operations had been followed with fire, before replanting.

Insects Affecting Livestock and Man
A severe outbreak of MOSQUITOES (Aedes sollicitans and A. taeniorhynchus), said to be worst in 20 years, occurred in September in Craven and Carteret Counties, following one of the hurricanes. One infestation of a dog by SCREWWORM (Callitroga hominivorax) in Moore County in May was reported.

SUMMARY OF INSECT CONDITIONS - 1954

TENNESSEE

Reported by R. P. Mullett

The pattern of insect infestations this year was fairly normal with two notable exceptions. BOLL WEEVILS were at a minimum and unusually large numbers of CUTWORMS appeared in the spring.

Cereal and Forage Pests
The most serious insect outbreak for the year was that of the ARMYWORM (Pseudaletia unipuncta). Around 200,000 acres were infested, 160,000 acres seriously. Of the 160,000 acres, 100,000 acres had controls applied with a saving of approximately 1-1/2 million dollars. Sixty thousand acres which were not treated sustained a loss of around $950,000. This outbreak at its inception showed it would equal or surpass last year's infestation. The outbreak was about two weeks earlier than last year, but a protracted cold spell apparently delayed growth of larvae for sufficient time to allow the parasites to check the infestation. In late March and early April large numbers of CUTWORMS (Argrotis gladiaria, Feltia subgothica) appeared in pasture fields all over eastern and Middle Tennessee. In some areas the cutworms were present in sufficient numbers so as to undertake migration. EUROPEAN CORN BORER (Pyrausta nubilalis) was prevalent over the State, although infestations were light to moderate and did not cause too much damage. A few scattered infestations of SEED-CORN MAGGOT (Hylemya cilicrura) occurred in the spring. There were some fairly heavy and widespread infestations of FALL ARMYWORMS (Laphygma frugiperda) in central Tennessee in October on newly-sprouting small grain and pasture fields. About 8,000 acres were seriously enough

infested to require control measures. Control measures were applied to about 6,000 acres and 2,000 acres were destroyed and had to be replanted. CORN EARWORMS (Heliothis armigera) were prevalent although not too numerous over the State this year as compared with last year when enormous numbers appeared early in the summer as a budworm in corn over most of the State. BLISTER BEETLES were not nearly so numerous this year as last, though scattered infestations were found over the State. GRASSHOPPERS were again numerous, causing some damage to tobacco in the eastern and middle parts and doing some damage to corn in the western area. A very few pasture fields in two counties in Middle Tennessee were found to be infested with a SAWFLY (Dolerus similis). Two eastern counties had infestations of ENGLISH GRAIN APHID (Macrosiphum granarium) with approximately 1,000 acres seriously infested and requiring control measures. These aphids attacked principally wheat and in dough stage. Fields not treated suffered heavy losses, though there was a saving by control work of approximately $13,000 on 800 acres, while approximately 200 acres had loss of about half the yield of $4,000 . A STRATIOMYID (Hermetia illucens) was found in large numbers in bottoms of many silos over the State, although apparently doing no damage. MEADOW SPITTLEBUG (Philaenus leucophthalmus) which was found in a very few legume fields in the extreme eastern part of the State two years ago was found this year to be much more numerous and very widespread over the entire eastern third of the State. It is not known if this insect is causing any damage in Tennessee. ROUGH-HEADED CORNSTALK BORER seriously infested scattered fields of corn in the western area.

Cotton Insects

Cotton insects with a few exceptions caused little damage to the crop in 1954. Very few BOLL WEEVILS (Anthonomus grandis) emerged from hibernation in the spring and damage by this pest was lowest in several years. Only a few scattered communities in the southwestern counties where there was sufficient rainfall did the weevil build up sufficiently to require control measures. Damage from PLANT BUGS, BOLLWORMS, and SPIDER MITES was negligible. One county in southern Middle Tennessee sustained damage to seedling cotton from FLEA BEETLES. A very very few LEAFWORMS were found in the western part of the State, but caused no damage.

Vegetable Insects
Common vegetable insects were present this summer in normal numbers over the State except for MEXICAN BEAN BEETLE (Epilachna varivestis) which was almost non-existent except at one or two places in higher altitudes. CABBAGE LOOPER (Trichoplusia ni) was quite prevalent generally. Spotty scattered infestations of LESSER CORNSTALK BORER (Elasmopalpus lignosellus) were found in late planted beans.

Tobacco Insects
TOBACCO BUDWORMS (Heliothis virescens) was the most serious tobacco pest of the year, occurring over most of the tobacco area in heavy numbers. Persistent controls were widely practiced. TOBACCO HORNWORMS (Protoparce sp.) were not much of a problem. A few VEGETABLE WEEVILS (Listroderes costirostris obliquus) were found scattered over middle Tennessee in tobacco beds causing only minor damage. ARMYWORMS and CUTWORMS caused the most damage to tobacco beds, in many cases migrating into and destroying entire beds over night. GRASSHOPPERS also caused some damage to tobacco.

Tree Insects
Large numbers of ELM LEAF BEETLE, LOCUST LEAF MINER, MIMOSA WEBWORM caused considerable defoliation of their respective host trees across the State. BAGWORMS on various coniferous shrubs were quite prevalent this year. Large numbers of EASTERN TENT CATERPILLAR (Malacosoma americanum) appeared across State, mostly being a nuisance after leaving webs, little damage. VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) which defoliated large acreages of oak trees in the western area last year was virtually non-existent in 1954. Many trees which have been in poor condition the past couple of years because of drought conditions were attacked by many species of BARK BEETLES and BORERS.

Cattle Pests
HORN FLIES (Siphona irritans) were quite prevalent generally. A few scattered areas of infestation of BLACK FLIES were found along the Mississippi River. CATTLE GRUBS were present in moderate normal numbers. No cases of SCREWWORM (Callitroga hominivorax) were reported. HOUSE FLIES were very prevalent around dairy barns. LICE infestations were few and scattered. Livestock owners on the whole are doing a creditable job in control of livestock pests.

Household and Miscellaneous Pests

BOXELDER BUGS, FLEAS, and CLOVER MITES appeared as nuisances in scattered infestations. TICKS were a nuisance in houses and on pets in scattered areas in the spring and fall. Several cases of tick paralysis were reported from tick bites. Four children and 3 adults in Houston County, Tennessee, were reported to have been bitten by LONE STAR TICKS (Amblyomma americanum) and infected with either Rocky Mountain spotted fever or Bullis fever.

SUMMARY OF INSECT CONDITIONS - 1954

RHODE ISLAND

Reported by K. E. Hyland, Jr.

Cereal and Forage Insects

Outbreaks of the ARMYWORM (Pseudaletia unipuncta) occurred during latter part of July and first of August. These localized outbreaks are considered by some to have been more serious this season than in recent years. Oats, corn, millet and grasses were attacked. In at least one instance nearly 100 percent of the larvae were parasitized by at least one species of parasite. Only one outbreak of FALL ARMWORM (Laphygma frugiperda) was noted, this one occurring about the middle of July. The STALK BORER (Papaipema nebris) caused some damage to corn plantings during early summer. EUROPEAN CORN BORER (Pyrausta nubilalis) and CORN EARWORM (Heliothis armigera) were no more abundant than usual. LEAFHOPPER and APHID populations on forage crops this season were near average.

Ornamental and Nursery Stock Pests

Heavy infestations of JAPANESE BEETLE (Popillia japonica) occurred in portions of Newport and Bristol Counties, where many trees were severely defoliated. In other areas the beetles were generally no more abundant than in previous years. MITES were found consistently on evergreens, although less abundant than in many previous years, perhaps due in part to weather. SPRUCE SPIDER MITE (Paratetranychus ununguis) was abundant on arborvitae. Inspection reports indicated that nearly every nursery was infested. SCALE INSECTS in general were no more abundant than usual. The BIRCH LEAF MINER (Fenusa pusilla) severely infested grey birches throughout the State again this year. Only the first brood was of serious proportions. A very light infestation of the locust leaf miner (Chalepus dorsalis) occurred. The population of GYPSY MOTH (Porthetria dispar) was reported heavier than usual, but no serious defoliation was noted. EASTERN TENT CATERPILLAR (Malacosoma americanum) was very light.

Insects Affecting Livestock and Man

The AMERICAN DOG TICK (Dermacentor variabilis) was very abundant during spring and early summer. This tick was of more concern to sheep raisers than the SHEEP KED (Melophagus ovinus). BLACK-LEGGED TICK (Ixodes ricinus scapularis) continues abundant in the fall and winter months principally as a parasite of dogs. A specimen of LONE STAR TICK (Amblyomma americanum) was collected in Washington County by J. A. Mathewson, State Department of Agriculture. HOUSE FLIES were abundant during late summer. Fannia sp. was reported causing concern in one locality during July. Several severe infestations of CHICKEN MITE (Dermanyssus gallinae) were reported from scattered sections. No distribution pattern was established. Local pest control operators are of the opinion that BEDBUGS were more numerous this year than previously; at least the number of calls they received was considerably more. MOSQUITOES were generally abundant. One outbreak of SALT-MARSH MOSQUITO (Aedes sollicitans) occurred in the Galilee area when an area of approximately 800 acres was blocked off from tidal action. Mosquitoes (unidentified) were abundant inland after the hurricane of August 31.

Fruit Insects

MITES, including European red mite (Metatetranychus ulmi) and two-spotted spider mite (Tetranychus bimaculatus) were subnormal in abundance during 1954. An occasional medium to heavy infestation was reported. Of the two, the European red mite was more prevalent. Population of CODLING MOTH (Carpocapsa pomonella) was very low, as was population of RED-BANDED LEAFROLLER (Argyrotaenia velutinana). APHIDS were abundant in a few scattered orchards, but not generally. APPLE APHID (Aphis pomi) was generally more abundant than ROSY APPLE APHID (Anuraphis roseus). PLUM CURCULIO (Conotrachelus nenuphar) was not abundant, nor was APPLE RED BUG (Lygidea mendax). APPLE MAGGOT (Rhagoletis pomonella) was generally distributed and infestations generally were light.

Vegetable Insects

FLEA BEETLES, principally potato flea beetle (Epitrix cucumeris), were very abundant during most of the season, being a problem on tomatoes, corn, and beans, as well as potatoes. CUCUMBER BEETLES, both striped cucumber beetle (Acalymma vittata) and spotted cucumber beetle (Diabrotica undecimpunctata howardi) were generally abundant. The spotted species was particularly abundant later in the summer. The host plants had a particularly long growing season and cucumbers remained green much longer than usual. Infestations of MEXICAN BEAN BEETLE (Epilachna varivestis) were light except for a few scattered plantings. COLORADO POTATO BEETLE (Leptinotarsa decemlineata) was not abundant. Mites were not generally abundant. STALK BORER caused considerable damage to tomatoes, potatoes, and sweet peppers. SQUASH BUG (Anasa tristis) was relatively abundant in the Kingston area. EUROPEAN CORN BORER (Pyrausta nubilalis) and CORN EARWORM (Heliothis armigera) populations were no greater than usual. CORN SAP BEETLE (Carpophilus dimidiatus) was very common on sweet corn in areas of Washington County and should be carefully watched in future years.

Turf Insects

JAPANESE BEETLE grubs were generally abundant and ASIATIC GARDEN BEETLE (Autoserica castanea) was abundant in areas of Washington and Kent Counties. The latter appears to be extending its range northward.

Household and Wood Products Pests

TERMITES continue to be of considerable concern. EUROPEAN EARWIG (Forficula auricularia) was very abundant during the past summer, particularly in the Newport area and in the eastern portion of Providence and Kent Counties and in Washington County. It appears to be extending its range. It was taken for first time from the extreme northwest corner of the State. CLOVER MITE (Bryobia praetiosa) was unusually abundant during early spring. Appeared to be more persistent than usual.

SUMMARY GYPSY MOTH CONDITIONS - 1954

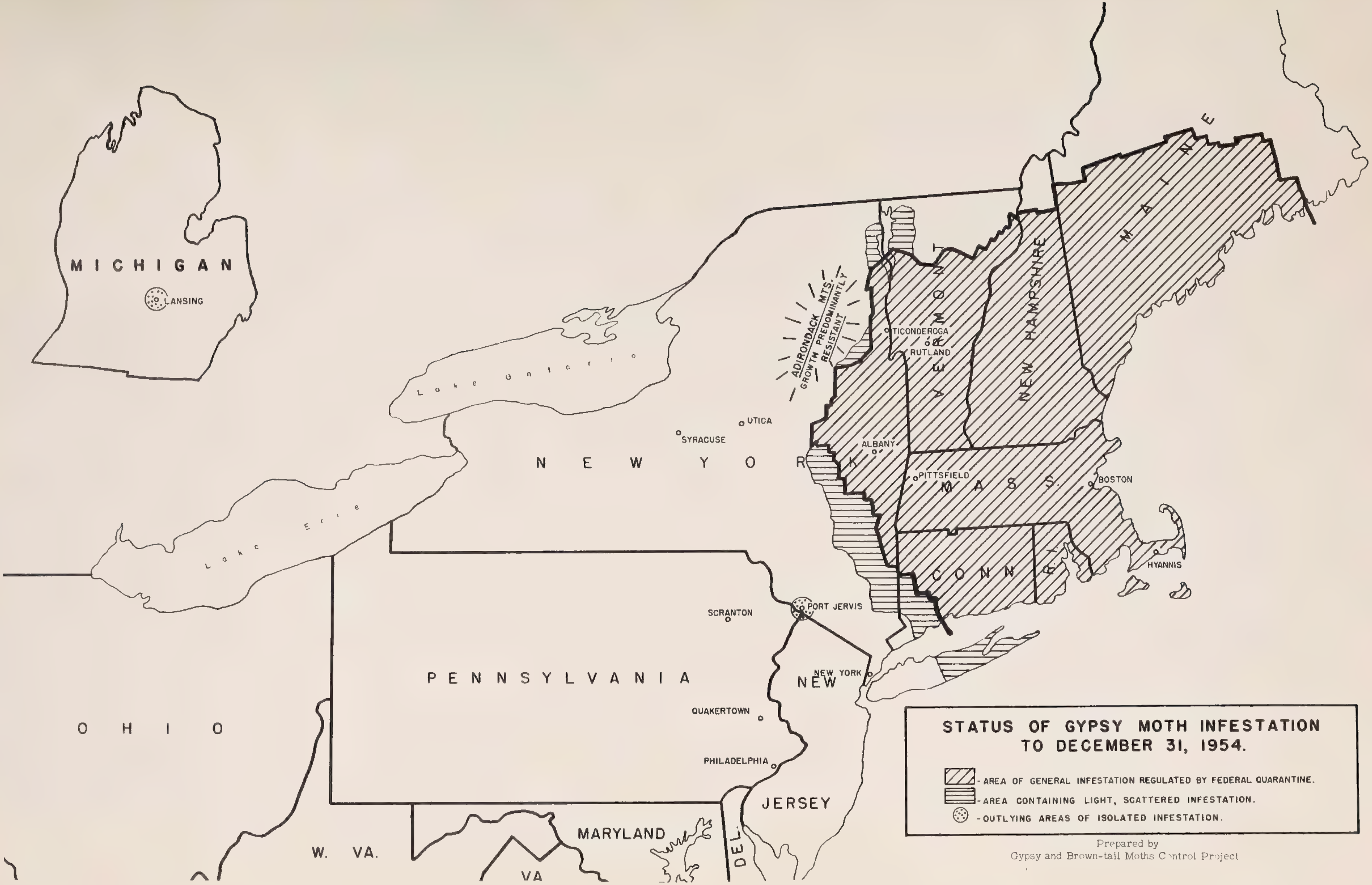
Reported by H. L. Blaisdell

Following the devastating outbreak of gypsy moth (Porthetria dispar) in 1953, scouting surveys showed sufficient residual infestation to indicate a recurrence of severe damage in 1954 if not reduced by applied or natural control factors. Areas of potential defoliation included southern sections of Maine, New Hampshire and Vermont, western sections of Connecticut and Massachusetts, and scattered locations in the eastern edge of New York. Isolated spots of infestation were discovered near Carbondale, Pennsylvania and at Lansing, Michigan. In spring of 1954, application of DDT spray for gypsy moth control reached an all-time record exceeding 1,400,000 acres. Most of the sprayed acreage was in New England areas of potential defoliation. The following table summarizes the gypsy moth spraying accomplished in 1954:

	(Acres) By Aircraft		By Mist Blower		Grand
State	Federal Contract	State & Local	Federal	State	Total
Conn.	28,000	133,822	1,453	-	163,278
Maine	-	27,590	2,000	-	29,590
Mass.	-	977,181	-	-	977,181
Mich.	-	86,400	-	-	86,400
N. Y.	53,260	33,650	832	-	87,742
Penn.	6,531	-	-	100	6,631
R. I.	-	-	-	25,347	25,347
Vt.	9,765	15,000	82	-	24,847
Totals	97,553	1,273,643	4,370	25,447	1,401,016

On completion of the spray program in mid-June, extensive surveys were made with sex-attractant traps. Results of the survey in Michigan indicate that only a few isolated spots of light infestation remain to be cleaned up following the initial eradication effort in 1954. In southern New York territory, including the lower Hudson Valley and the eastern half of Long Island, male gypsy moths were captured in such large numbers as to indicate recent spread and establishment of infestation into these areas. Moths were also captured at two traps placed in the northeastern corner of Pennsylvania near the juncture of this state with New York and New Jersey.

A cooperative scouting survey in the fall of 1954 confirmed trap indications that considerable windspread of small larvae had occurred from areas where epidemic conditions were recently prevalent. In affected areas of eastern New York, a light but general scattering of new infestation has been found. No evidence of old infestation has been discovered at a majority of these infested sites. Preliminary scouting in the tri-state area surrounding Port Jervis, New York resulted in discovery of infestation six miles north of Port Jervis in the town of Forestburg, New York. It is apparent that this infestation has existed for several years and consequently has no relationship to new areas of infestation further east in the Hudson Valley. However, it is considered to be a likely source from which infestation could spread to surrounding territory. It is located on high land overlooking nearby areas of northeastern Pennsylvania and northwestern New Jersey. The infestation is less than eight miles north of the single egg mass infestation found in New Jersey on November 22 and is even closer to the Pennsylvania territory where three moths were captured in two traps last August.



STATUS OF GYPSY MOTH INFESTATION TO DECEMBER 31, 1954.

- ▨ - AREA OF GENERAL INFESTATION REGULATED BY FEDERAL QUARANTINE.
- ▤ - AREA CONTAINING LIGHT, SCATTERED INFESTATION.
- ⊙ - OUTLYING AREAS OF ISOLATED INFESTATION.

Prepared by
Gypsy and Brown-tail Moths Control Project

Aerial surveys in the summer of 1954 showed 491,448 acres defoliated by the gypsy moth. Field observations during the same period showed a high incidence of larval mortality from a polyhedrosis virus responsible for the wilt disease. This natural control, and the spray treatment of more than one million acres of heavily infested New England territory, were undoubtedly the principal factors in preventing defoliation figures from exceeding those of the previous year, involving more than 1,487,000 acres of forest growth. Further reductions in the residual infestation of central and eastern New England resulted from an unusual abundance of the pupal parasite Sturmia scutellata. As a result of this combination of control factors, the zone of heaviest residual infestation appears to be centered for the first time in western areas of New England and in the eastern edge of New York. Current distribution of the gypsy moth is shown on map.

USDA, AGRL RESEARCH SERVICE
ENTOMOLOGY RESEARCH BR.
FRUIT INSECT INVESTIGATIONS
7-23-54 PLANT INDUSTRY STATION
IPS BELTSVILLE, MD.